Claims

The following is a copy of Applicants' claims that identifies language being added with underlining ("___") and language being deleted with strikethrough ("—"), as is applicable:

1. (Original) A bi-directional optical link, comprising:

a thin film detector having an upper surface facing a predetermined direction to receive incident light; and

a thin film emitter stacked over the upper surface and oriented to direct a beam of light toward the predetermined direction.

2. (Original) The link of claim 1, wherein the thin film emitter is a vertical cavity surface emitting laser.

3. (Original) The link of claim 1, wherein the thin film emitter is a light emitting diode.

4. (Original) The link of claim 1, wherein the thin film emitter further comprises a pair of electrical connectors for electrically coupling the thin film emitter to a circuit.

5. (Original) The link of claim 1, wherein the thin film detector is an inverted metal-semiconductor-metal photodetector.

6. (Original) A method establishing a bi-directional communications link, comprising the steps of:

positioning a thin film detector having an upper surface so as to face a predetermined direction to receive incident light;

stacking a thin film emitter over the upper surface; and

orienting the thin film emitter to direct a beam of light toward the predetermined direction.

7. (Original) The method of claim 6, wherein the step of stacking a thin film emitter over the upper surface further comprises the step of stacking a vertical cavity surface emitting laser over the upper surface.

8. (Original) The method of claim 6, wherein the step of stacking a thin film emitter over the upper surface further comprises the step of stacking a light emitting diode.

9. (Original) The method of claim 6, further comprising the step of providing a pair of electrical connectors for electrically coupling the thin film emitter to a circuit.

10. (Original) The method of claim 6, wherein the step of positioning a thin film detector further comprises the step of positioning an inverted metal-semiconductor-metal photodetector.

11. (Original) The method of claim 6, wherein the thin film detector and the thin film emitter comprise a substrate-removed semiconductor material.

12. (Original) The method of claim 6, wherein the step of stacking comprises stacking to occlude a portion of the thin film detector.

13. (Original) The method of claim 6, wherein the step of orienting comprises orienting the thin film emitter to emit the beam of light while the detector receives the incident light.

14. (Newly Added) A bi-directional optical link, comprising:

a substrate-removed, thin film detector having an upper surface facing a predetermined direction to receive incident light; and

a substrate-removed, thin film photon emitter stacked over the upper surface and oriented to direct a beam of light toward the predetermined direction.

15. (Newly Added) The link of claim 14, wherein the substrate-removed, thin film photon emitter is a vertical cavity surface emitting laser.

16. (Newly Added) The link of claim 14, wherein the substrate-removed, thin film photon emitter is a light emitting diode.

17. (Newly Added) The link of claim 14, wherein the substrate-removed, thin film photon emitter further comprises a pair of electrical connectors for electrically coupling the substrate-removed, thin film photon emitter to a circuit.

18. (Newly Added) The link of claim 14, wherein the substrate-removed, thin film detector is an inverted metal-semiconductor-metal photodetector.